

CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD

INSPECTION REPORT

3 July 2013

DISCHARGER: Walker Mine, Abandoned and Unclaimed Private Property

LOCATION & COUNTY: Plumas County

CONTACT(S): Central Valley Water Board, Jeff Huggins

INSPECTION DATE: 18-19 June 2013

INSPECTED BY: Jeff Huggins, Water Resources Control Engineer

ACCOMPANIED BY: Bill Brattain, Vino Jain, Water Resources Control Engineers

COMMENTS:

On June 18-19, Board staff performed the annual spring inspection of the Walker Mine in Plumas County as required by Walker Mine Operations and Maintenance Procedures, dated June 1997.

UNDERGROUND AREAS INSPECTED:

Portal Area:

The portal door at the main 700 level adit was securely locked upon our arrival. There did not appear to be any new bullet holes in the steel door that secures access to the 700 level adit nor vandalism of the portal door. The drainage channel between the mine portal and the waste dump was open and flowing at about 0.5 gallons per minute. All four of the heavy-duty locks on the portal doors were securely locked upon leaving the mine portal.

Ventilation Fan:

As shown in photos # 3-5, the flexible ventilation duct was hooked to the ventilation fan which was powered by the portable generator and fresh air was pushed through the rigid ventilation ducting to the mine seal. The ventilation system was allowed to run for approximately 1-hour before entry was made into the 700 level adit. This configuration results in fresh air continually being pushed towards the mine seal area in the 700 level adit and discernible airflow into the inspectors face as you advance into the 700 level adit.

Seal Pressure:

A brief inspection of the Telog pressure data recorder (photo #7) indicated that it was recording pressure data daily as programmed. The Telog data recorder is connected via a 2,500-foot long electronic cable to a Druck pressure sensor at the mine seal. Once per day the data recorder measures and stores an electronic current measurement (mAmps) from the Druck pressure sensor. This data is converted mathematically by Board staff to feet of pressure head on the mine seal¹. At the time of the inspection, a current measurement of 7.06 mAmps (approximately 141 feet of head over the mine seal) was recorded. For the period 1 October 2012 through 16 June 2013, a maximum

¹ (Note: The Druck pressure sensor is scaled to transmit 4 to 20 mAmps for 0 to 300 psi).

Approved: 

Inspection ID# 13055985

WDID #5A320704003

pressure head of 144.7 feet over the mine seal was recorded on 1 October 2012 indicating that 2012-2013 precipitation was below normal. Board staff downloaded the pressure data from the Telog data recorder during the inspection and used it to update the attached *Walker Mine Concrete Seal Pressure Head and Snow Water Content* graph which is attached to this report. The batteries that power the Druck pressure sensor recorder were removed and replaced with recharged batteries during this inspection (photo #6).

Corrugated Metal Pipe:

The drainage channel inside the corrugated section of the mine tunnel was working effectively and was not obstructed. No corrosion, significant seepage, deflection, or physical damage was observed in the corrugated metal pipe section of the 700 level adit.

Timbered Section:

As shown in photo #8, the timbered section of the 700 level was open and clear. Conditions in this section were wet and appear to be from shallow groundwater infiltration from the hillside directly above the timber supported section (first 900 feet) of the 700 level adit. No major support problems were observed. However, a number of the timber sets, lagging, and blocking are showing signs of significant decay and need to be replaced.

Unsupported Section:

As shown in photo #9, no scaling was necessary in the unsupported section of the 700 level and no signs of recent rockfall were noted. Water seepage observed in the unsupported section was minimal.

Mine Seal, Piping and Valves

Conditions at the mine seal are shown in photos #10-14. Water seepage from around the mine seal and pooled water conditions at the base of the mine seal appeared to be unchanged since July of 2010. Seepage appears to come from the crown of the seal and along both sides. Iron precipitate is evident on the face of the mine seal (nearly centered) but does not appear to be significantly different than that shown in the *Walker Mine Seal Testing and Evaluation Report* (GEI Consultants, 1 March 2002). The piping and valves were uncovered and inspected and no seepage or significant changes in corrosion were noted. The valves have not been tested for a number of years due to concern that they may not close completely if opened. Samples of the water pooled at the base of the seal (monitoring location #30) were collected for laboratory analysis.

SURFACE AREAS INSPECTED:

Walker Mine Tailings Facility:

Board staff also inspected and obtained water samples from in and around the Walker Mine tailings facility (see photos 18-34) located on adjacent public lands administered by the United States Department of Agriculture Forest Service (USFS).

Subsidence Areas (Central Orebody and Piute Orebody):

Due to time constraints, inspection of the diversion channels and the subsidence areas was not made during this inspection.

Water Quality Monitoring:

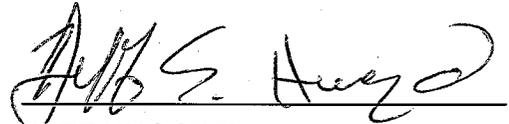
Surface water samples were collected from Dolly, Little Grizzly, Nye, and Ward Creeks. All of the sample locations had sufficient surface water to sample. Laboratory results are pending.

SUMMARY:

A semiannual inspection was made of the Walker Mine site. Surface water monitoring was performed and water pressure measurements on the mine seal were obtained. New batteries were installed for the data logger.

RECOMMENDATIONS:

An experience underground mine contractor should be hired to inspect the timbered section and the unsupported section of the 700 level adit for signs of ground support deterioration. Furthermore, while the stainless steel piping and valves need to be inspected and physically tested to ensure their operability in accordance with the Board's Operations and Maintenance Plan for the Walker Mine, there is some potential risk that the valves cannot be completely closed after being opened.



JEFF HUGGINS

Water Resources Control Engineer



Photo 1. Walker Mine Concentrator and Mill Foundations.



Photo 4. Showing Jetair axiflow fan for ventilation of the 700 level adit.

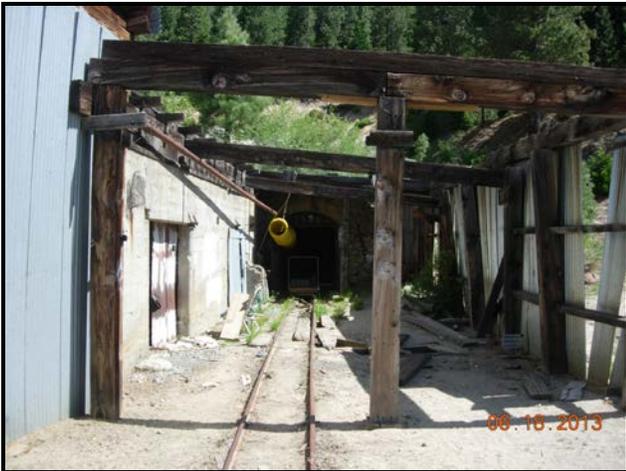


Photo 2. Walker Mine 700 Level Adit/Portal.



Photo 5. Portable generator used to power the ventilation fan.



Photo 3. Flexible ventilation duct for the ventilation system at the Walker Mine.



Photo 6. Fresh batteries for the Walker Mine pressure data recorder.



Photo 7. Prior photo of the Walker Mine pressure data recorder located approximately 200 feet inside the 700 level adit.

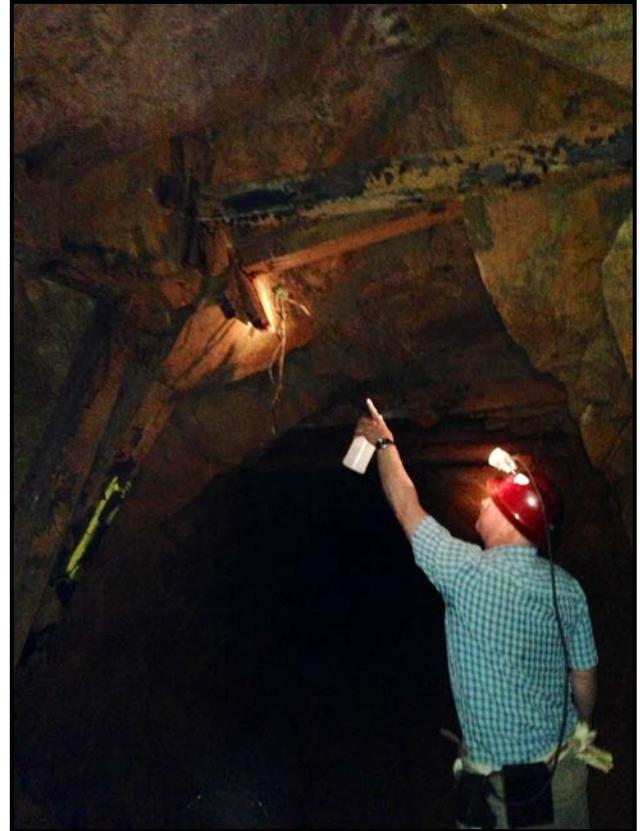


Photo 9. Examining a stull in the unsupported section of the 700 level adit. No scaling was necessary and no signs of recent rockfall were noted. Water seepage observed in the unsupported section was minimal.



Photo 8. Timber supported section of the 700 level adit. No major support problems were observed, however a number of the timber sets, lagging, and blocking are showing signs of significant decay and should be replaced.



Photo 10. Taken at the concrete mine seal in the 700 level adit. Plastic bags are used to protect the twin stainless steel valves, pressure transmitter, and pressure gauge.



Photo 11. Prior photo of the 4-inch valve and pressure gauge at the mine seal.



Photo 14. Pooled water is approximately 14 inches deep at the base of the mine seal. No significant changes were noted at the mine seal location.



Photo 12. Showing iron precipitate forming on the face of the mine seal from seepage around the seal.



Photo 15. Settling pond located below the Walker Mine portal.

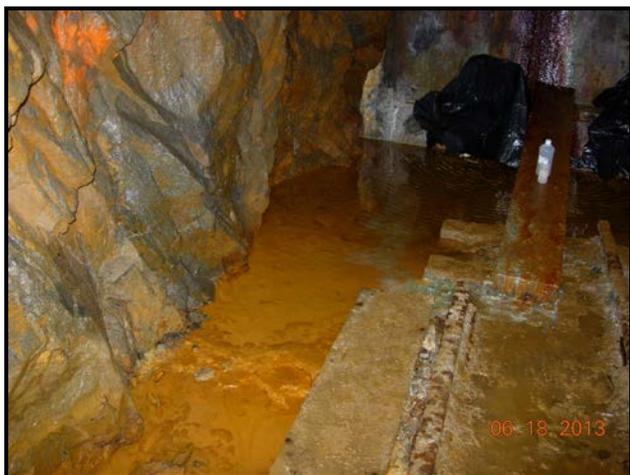


Photo 13. Showing the extent of standing water from seepage around the mine seal. The water seeps into the floor of the 700 level adit within 200 feet of the seal.



Photo 16. Photo of the west side of the settling pond, monitoring location #19.



Photo 17. Sampling at monitoring location #19.



Photo 20. Taken from southeast side of the Walker Mine tailings impoundment looking northwest.



Photo 18. Photo of monitoring location #4, Dolly Creek crossing County Road 112 below the Walker Mine.



Photo 21. Southeast side of the Walker Mine tailings impoundment showing stockpiled stumps and gravel from the USFS 2008 construction of the Dolly Creek diversion channel.



Photo 19. Taken from spot of previous photo showing exposed tailings in the Dolly Creek drainage below County Road 112.



Photo 22. Taken from same location as photos 20-21 showing stockpiled logs and debris at the Walker Mine tailings impoundment.



Photo 23. Showing wind erosion control structures (wind fences) on southeastern side of the tailings.



Photo 24. Showing fugitive dust (tailings). Wind conditions were considered to be slight.



Photo 25. Showing the Dolly Creek diversion channel outfall to Little Grizzly Creek. Photo taken from Little Grizzly Creek.



Photo 26. Photo of Dolly Creek outfall to Little Grizzly Creek showing fine grained sediment (tailings) being discharged to Little Grizzly Creek.



Photo 27. Closeup view of Photo 26.



Photo 28. USFS Dam, monitoring location #6. No water was observed flowing over the dam.



Photo 29. Taken from the upstream side of the USFS Dam. No water was observed at this location.



Photo 32. Showing well established vegetation in the Dolly Creek diversion channel.



Photo 30. Showing the Dolly Creek diversion channel headwork's above the tailings impoundment.



Photo 33. Showing the base of the vegetation in the Dolly Creek diversion channel.



Photo 31. Showing the headwork's outfall to the Dolly Creek diversion channel realignment.



Photo 34. Showing fine grained sediment (tailings) in the Dolly Creek diversion channel.